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ATTORNEY DOCKET No.: 2003882-0016 (P35633US-M)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Bipin Chandra Muljibhai Patel      Examiner: Not yet assigned  
Serial No.: 10/500,495      Art Unit: 1616  
Filing Date: June 28, 2004  
Title: DELIVERY OF NEUTRON CAPTURE ELEMENTS FOR NEUTRON CAPTURE THERAPY

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**TRANSMITTAL**

Enclosed please find the following:

1. Petition to Correct Filing Receipt (2 pp.);
2. Copy of Filing Receipt with corrections noted thereon in red ink (**Exhibit A** (2 pp.);
3. Copy of cover page for corresponding published PCT Application No. WO 03/055520, with priority information circled in red (**Exhibit B** (1 pg.); and
4. Return Postcard.

Kindly charge any additional fees or credit any overpayments to our Deposit Account No.

03-1721.

Respectfully submitted,  
CHOATE, HALL & STEWART LLP

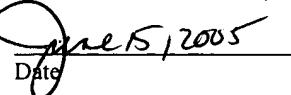
  
Charles E. Lyon, D.Phil.  
Reg. No. 56,630

Dated: June 13, 2005

PATENT GROUP  
CHOATE, HALL & STEWART LLP  
Exchange Place  
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Boston, MA 02109  
Telephone: 617-248-5150  
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Signature: Kathy Hart Gagnon  
Typed or Printed Name of person signing certificate



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Date	<i>June 15, 2005</i>
Signature	
<i>Kathy Hart Gagnon</i>	
Kathy Hart Gagnon	
Typed or Printed Name of person signing certificate	

**PETITION TO CORRECT FILING RECEIPT**

Applicant respectfully requests correction of the following errors in the Filing Receipt (Confirmation No. 4500) mailed by the U.S. Patent and Trademark Office (USPTO) on April 27, 2005 (copy attached) for the above-referenced case:

1. The Filing Receipt incorrectly lists the foreign application number for this application. The correct foreign application number is:

**GB 0131058.0 12/28/2001**

Applicant offers in support of this Request the following documents:

- (i) Copy of Filing Receipt mailed by the USPTO on April 27, 2005, with corrections noted in red ink (**Exhibit A**) (2 pp.); and
- (ii) Copy of cover page for corresponding published PCT Application No. WO 03/055520, with priority information circled in red (**Exhibit B**) (1 pg.).

Applicant respectfully requests that a corrected filing receipt be issued as soon as possible.

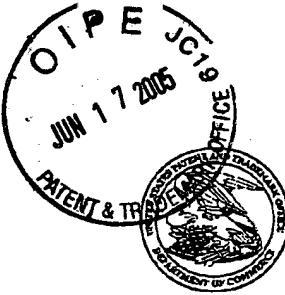
Please charge any fees associated with this filing, or apply any credits, to our Deposit Account No. 03-1721.

Respectfully submitted,  
CHOATE, HALL & STEWART LLP

Dated: June 13, 2005

  
\_\_\_\_\_  
Charles E. Lyon, D.Phil.  
Agent for Applicant  
Reg. No.: 56,630

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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/500,495	04/01/2005	1616	2300	2003882-0016	3	78	7

CONFIRMATION NO. 4500

24280  
CHOATE, HALL & STEWART LLP  
EXCHANGE PLACE  
53 STATE STREET  
BOSTON, MA 02109

FILING RECEIPT



\*OC000000015798161\*

Date Mailed: 04/27/2005

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Bipin Chandra Muljibhai Patel, Hitchin Hertfordshire, UNITED KINGDOM;

Power of Attorney: The patent practitioners associated with Customer Number 24280.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/GB02/05927 12/24/2002

Foreign Applications

GB  
~~EUROPEAN PATENT OFFICE (EPO)~~ (EPO) 0131058.0 12/28/2001

Projected Publication Date: 07/28/2005

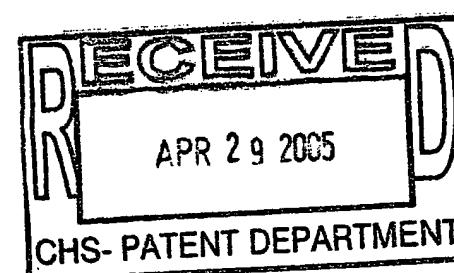
Non-Publication Request: No

Early Publication Request: No

\*\* SMALL ENTITY \*\*

Title

Delivery of neutron capture elements for neutron capture therapy



## Preliminary Class

424

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Title 37, Code of Federal Regulations, 5.11 & 5.15**

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(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
10 July 2003 (10.07.2003)

PCT

(10) International Publication Number  
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(75) Inventor/Applicant (for US only): PATEL, Bipin, Chandra, Muljibhai [GB/GB]; Psimei Pharmaceuticals plc, 13-21 High Street, Guildford, Surrey GU1 3DG (GB).

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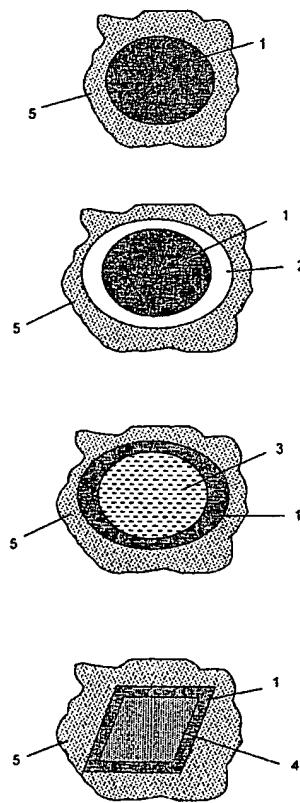
(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: DELIVERY OF NEUTRON CAPTURE ELEMENTS FOR NEUTRON CAPTURE THERAPY



(57) Abstract: Neutron capture therapy (NCT) for example, Boron neutron capture therapy (BNCT) requires the delivery of a neutron capture element such as Boron to a target site to be treated, followed by irradiation with neutrons. The invention provides new means for delivery of the neutron capture element in the form of insoluble inorganic nanoparticles having a particle size of about  $10^{-10}$ m to about  $10^{-6}$ m. The neutron capture element can be in particulate form or in the form of glass or glass ceramic or as a polymerised inorganic matrix or as a sol-gel derived xerogel. The nanoparticles of the invention can further comprise a biocompatible outer layer which provides the function of stealth and assists in providing an appropriate clearance rate. In some embodiments, the nanoparticles comprise a core selected from, for example, mica, zeolites,  $TiO_2$  spheres,  $ZrO_2$  spheres or particles or organic polymer particles or spheres surrounded by a thin film of the neutron capture element. Pharmaceutical compositions, uses and methods for the treatment of cancer are disclosed. Also disclosed is a process for the preparation of water insoluble nanoparticles comprising causing friction between pure blocks of the required neutron capture element in an inorganic form and collecting nanoparticles that result therefrom.

WO 03/055520 A1